

**San Bruno Mountain
Habitat Conservation Plan
Amendment
Environmental Assessment**

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Acronyms and Abbreviations

ABAG	Association of Bay Area Governments
ARB	California Air Resources Board
Authority	North County Fire Authority
BAAQMD	Bay Area Air Quality Management District
BESD	Brisbane Elementary School District
CDFFP	California Department of Forestry and Fire Protection
CNDDB	The California Natural Diversity Database
CO	carbon monoxide
CPI	Consumer Price Index
dB	decibel
dBA	A-Weighted Decibel
DFG	California Department of Fish & Game
EA	Environmental assessment
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
EVA	Emergency vehicle access
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
GVMID	Guadalupe Valley Municipal Improvement District
HCP	Habitat Conservation Plan
HMP	Habitat Management Plan
IA	Implementation Agreement
JUHSD	Jefferson Union High School District
Level of service	LOS
LLC	Limited Liability Corporation
LOS	Level of service
mgd	Million gallons per day

Mountain	San Bruno Mountain
NEPA	National Environmental Policy Act
NO ₂	Nitrogen dioxide
Northeast Ridge	Administrative Parcel 1-07
NWIC	Northwest Information Center of the California Historical Resources Information System
Permittees	County of San Mateo and cities of Brisbane, Daly City, and South San Francisco
PG&E	Pacific Gas and Electric Company
PM10	Particulate matter less than 10 microns in diameter
PM2.5	Particulate matter less than 2.5 microns in diameter
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SFPUC	San Francisco Public Utilities Commission
Sheriff	County's Office of the Sheriff
SO ₂	Sulfur dioxide
Southeast Ridge	Preservation Parcel
SSFSC	South San Francisco Scavenger Company
UI-NI	Unit I-Neighborhood I
UI-NII	Unit I-Neighborhood II
UII-NI	Unit II-Neighborhood I
UII-NII	Unit II-Neighborhood II
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
v/c	Volume to capacity
VRP	Visibility-reducing particle
VTM	Vesting tentative map

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Chapter 1

Purpose and Need for Proposed Action

1.1 Introduction

This environmental assessment (EA) was prepared by the U.S. Fish and Wildlife Service (USFWS) pursuant to the National Environmental Policy Act (NEPA). It evaluates the effects of issuing an amendment to an existing incidental take permit (ITP or permit) under Section 10 (a)(1)(B) of the federal Endangered Species Act (ESA) for activities covered by a proposed amendment to the San Bruno Mountain (Mountain) Habitat Conservation Plan (HCP) (San Mateo County 1982, as amended). The County of San Mateo and City of Brisbane are preparing the amendment on behalf of the HCP permittees, which include the County of San Mateo and cities of Brisbane, Daly City, and South San Francisco (the Permittees). The proposed HCP amendment would include the following changes.

- **Revised Operating Program for the Northeast Ridge.** Chapter VII of the HCP would be revised to replace the approved operating program for the Northeast Ridge (the 1989 Vesting Tentative Map [VTM]) to allow for the development of Unit II-Neighborhood II (UII-NII) under a proposed 2007 modification (the 2007 VTM). The reconfiguration would reduce the amount of land to be developed and increase the size and value of Conserved Habitat within the Northeast Ridge, as well as reduce impacts to the Species of Concern covered under the HCP.
- **Supplementary Funding.** Section V.B of the HCP would be amended to address supplemental funding of four million dollars to be provided by the developer, Brookfield Northeast Ridge II LLC, concomitant to development of UII-NII within the Northeast Ridge. These funds would establish an HCP Endowment, which would be funded incrementally upon the granting of final map approval for the lots in UII-NII, pursuant to an agreement between Brookfield Northeast Ridge II LLC and the City of Brisbane. The HCP Endowment would be managed by the Trustees and would be available to fund ongoing habitat management and monitoring activities described in the Habitat Management Plan (HMP). Section V.B would also be amended to increase the annual charge per dwelling unit and per 1,000 feet of floor area for commercial and industrial activities within the portion of the HCP area under the City of Brisbane's jurisdiction. All funds from the annual charge would be part of the HCP's Trust Fund and managed by the Trustees.

- **Addition of Callippe Silverspot and Bay Checkerspot to ITP.** The existing ITP authorizes take coverage for the mission blue butterfly (*Icaricia icarioides missionensis*), the San Bruno elfin butterfly (*Incisalia mossii bayensis*), and the San Francisco garter snake (*Thamnophis sirtalis tetrataenia*). Section V.G of the HCP would be amended to propose the addition of the federally endangered callippe silverspot butterfly (*Speyeria callippe callippe*) and the federally threatened bay checkerspot butterfly (*Euphydryas editha bayensis*) to the list of species covered by the existing ITP. This addition would allow the use of more effective vegetation management techniques to protect butterfly habitat, and cover the revised operating program on the Northeast Ridge.

Issuance of amendment to the existing Section 10 ITP constitutes a discretionary federal action by USFWS and is thus subject to NEPA, which requires that all federal agencies assess the effects of its action on the human environment.

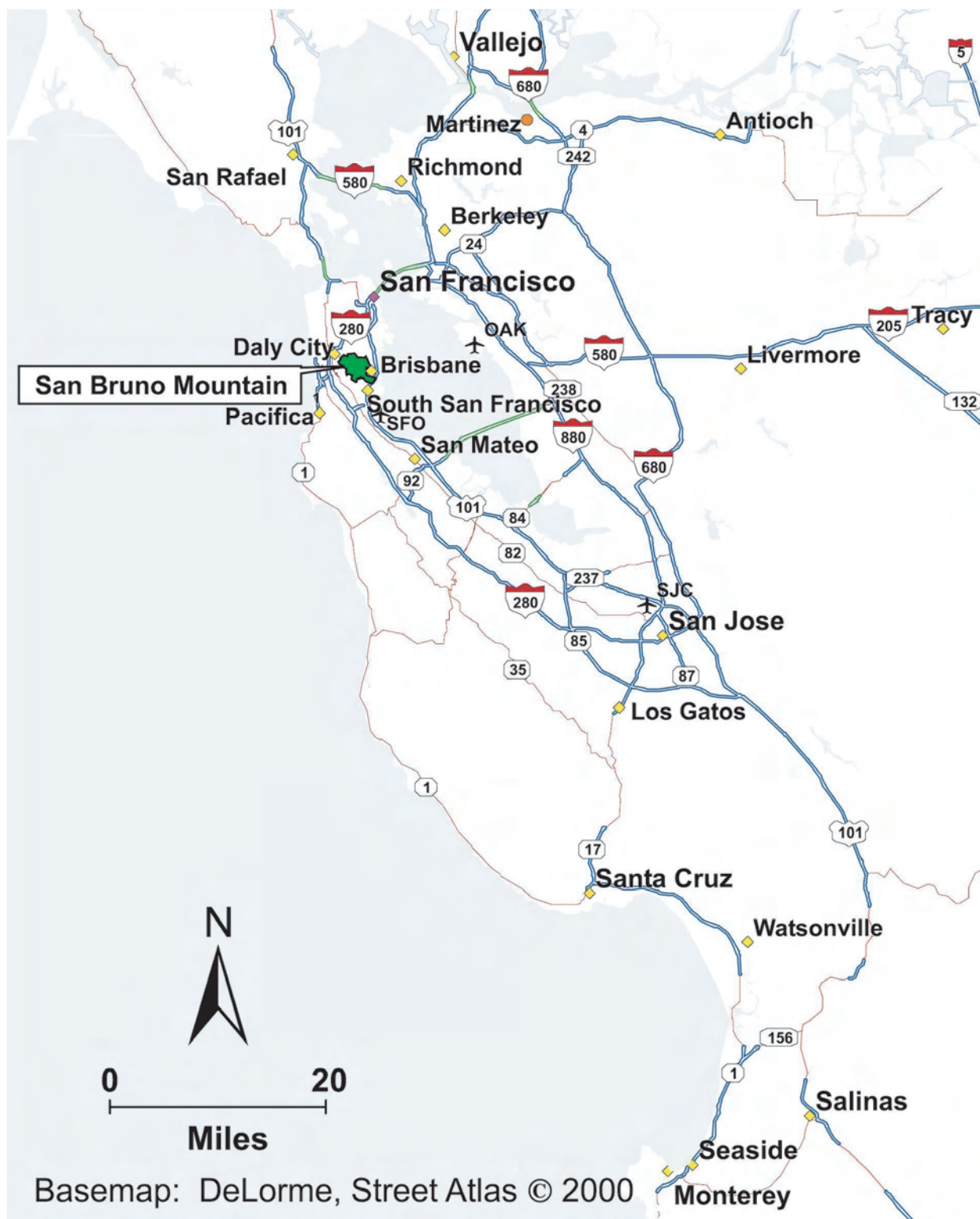
1.2 Background

San Bruno Mountain is located on the northern San Francisco Peninsula, just south of the San Mateo-San Francisco County boundary. The Mountain is surrounded on all sides by the cities of Colma to the west, Daly City to the north, Brisbane to the east, and South San Francisco to the south. Figure 1-1 shows the regional location. The San Bruno Mountain HCP study area consists of 3,537 acres, of which 2,828 acres are presently Conserved Habitat. Figure 1-2 shows the HCP boundaries.

Permit History

The original San Bruno Mountain HCP was completed in November 1982 and the USFWS issued a 30-year ITP to the Permittees on March 4, 1983. That permit (PRT 2-9818) expires on March 4, 2013, unless it is renewed. The proposed HCP amendment would not affect the duration of the existing permit nor would it add or remove any permit holders.

Since adoption of the HCP, approximately 308 acres of the Mountain have been developed. Additionally, 40.0 acres are planned for development (under the 1989 Northeast Ridge VTM) and another 276 acres remain unplanned (most in the Quarry and Brisbane Acres). Approximately 2,828 acres have been dedicated as Conserved Habitat, in addition to 84 acres that have been graded and restored. The Conserved Habitat includes both undisturbed and restored lands that have been dedicated as State and County parklands, as well as DFG lands that are managed through the HCP under cooperative agreements. Figure 1-3 shows the existing developed and protected lands on the Mountain.

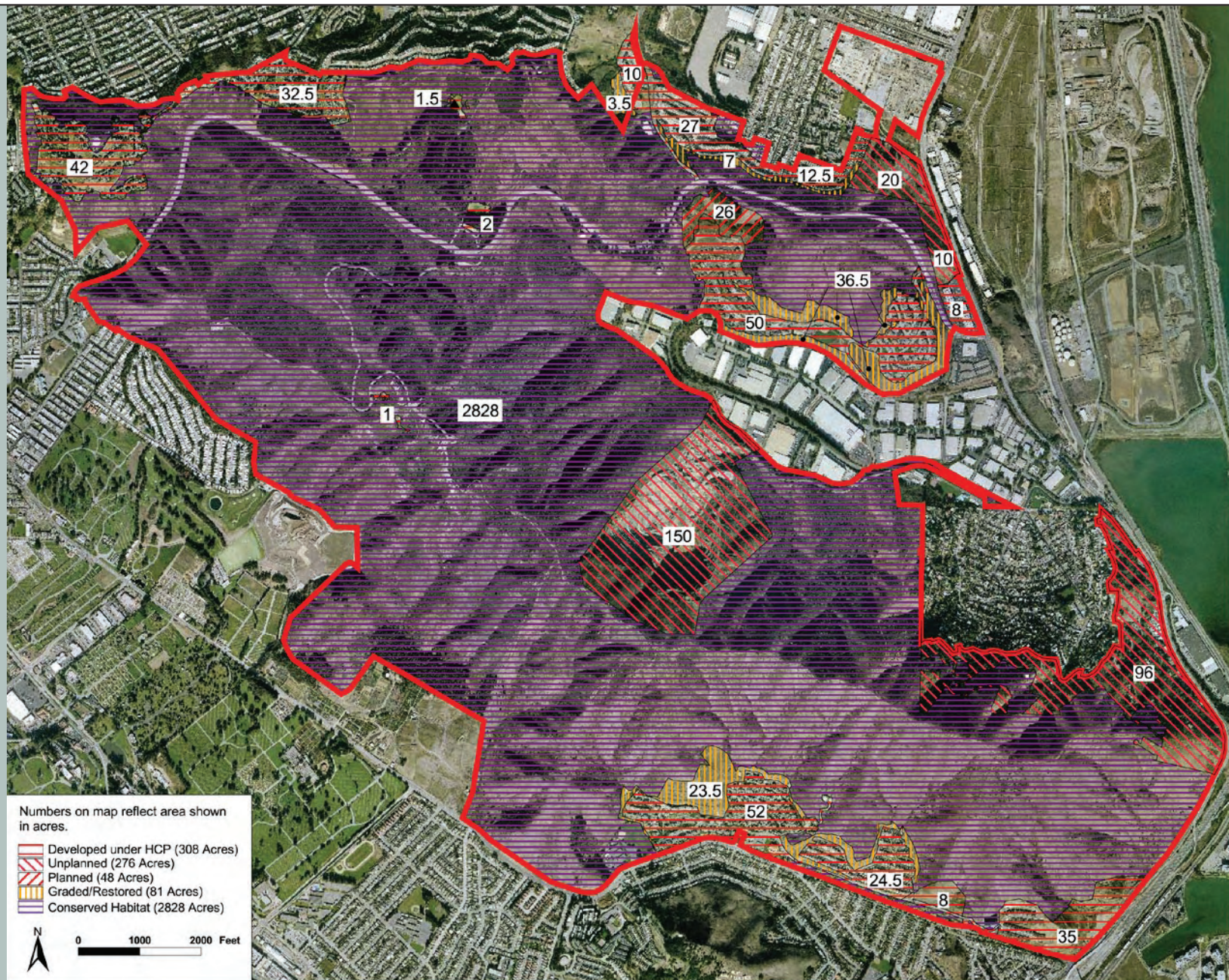


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Prior HCP amendments include the following.

1. The County of San Mateo applied for the “South Slope Geotechnical Amendment” on June 24, 1985. The SBM HCP was first amended August 30, 1985, in response to the application, which included the January 1985 Supplemental EIR/EA, the June 1985 Biological Study of the Amendment, and the June 1985 Addendum to the Supplemental EIR/EA.
2. The County of San Mateo also applied for the “Rio Verde Heights Amendment” on June 24, 1985. The SBM HCP was amended on December 24, 1985, for activities related to Rio Verde Heights. The application included the January 1985 Supplemental EIR/EA, the June 1985 Biological Study of the amendment, and the subsequent September 1985 Addendum to the Supplemental EIR/EA.
3. The County of San Mateo also applied for the “County Park (Colma Dump) Amendment” on June 24, 1985. The USFWS denied the request for the amendment on December 30, 1985. However, the County appealed the denial on February 25, 1986, USFWS asked for more information, the County offered changes and additions to their project, and the USFWS reversed their denial and amended the permit (“County Park Amendment”) on June 19, 1986.
4. The City of Brisbane applied for the “Northeast Ridge Project Equivalent Exchange Amendment” on February 2, 1990. In response to the application, the SBM HCP was last amended on August 27, 1990 to reconfigure conservation and development areas within Administrative Parcel 1-07. The application included an 1989 Addendum to the Final EIR and 1989 Supplement to the EA.

Permit Boundary

The existing ITP covers 3,537 acres of San Bruno Mountain, which includes 36 separate ownership parcels. The HCP amendment would not change the overall permit boundary, but it does change the area planned for development in Administrative Parcel 1-07. The HCP amendment describes the reconfiguration of lands on the Northeast Ridge for development and conservation, and the construction of 71 new single-family housing units in UII-NII. Figure 1-4 shows the Northeast Ridge site plan. This revised Northeast Ridge development plan would result in a reduction in housing development by 80 single-family units and a net increase of 20.36 acres of Conserved Habitat over existing development authorizations (the 1989 VTM).

The amended ITP would authorize the HCP amendment reconfiguration of the Northeast Ridge development plan for take of all existing Species of Concern (see below). Additionally, the HCP amendment proposes that the USFWS add the callippe silverspot and bay checkerspot to the ITP’s list of Species of Concern covered for potential take associated with the development of the Northeast Ridge and ongoing vegetation management and monitoring activities across the Mountain.

Species Covered by the Existing HCP and ITP

The original HCP's list of Species of Concern includes the mission blue butterfly (*Icaricia icarioides missionensis*), San Bruno elfin butterfly (*Incisalia mossii bayensis*), bay checkerspot butterfly (*Euphydryas editha bayensis*), callippe silverspot butterfly, San Francisco tree lupine moth (*Grapholitha edwardsiana*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), and solitary bee (*Dufourea stagei*), as well as many rare and endemic plants, and plants that function as host or larval food plants for the butterflies.

However, the existing ITP authorizes take coverage only for the federally listed mission blue butterfly, San Bruno elfin butterfly, and San Francisco garter snake. Conservation needs for the callippe silverspot and bay checkerspot butterflies were addressed in the HCP, but were not covered by the ITP because neither species was listed at the time. Because of its rarity, incidental take authorization of the San Bruno elfin butterfly on certain administrative parcels was not granted, but would require an amendment to the ITP.

1.3 Proposed Action Addressed in this EA

Definition of Proposed Action

The Proposed Action consists of the USFWS' decision on the issuance of an amendment to an existing Section 10 ITP for activities covered by a proposed amendment to the San Bruno Mountain HCP. As described above, the proposed HCP amendment would include a revised operating program for the Northeast Ridge; provision of supplementary funding; and a proposal to add the callippe silverspot and bay checkerspot to the ITP.

The specific project or activities that trigger the need for issuance of an amendment to the existing ITP to add the callippe silverspot and bay checkerspot to the list of covered species are listed below. These activities may physically disturb, harm, or harass the endangered butterflies and are therefore analyzed in *Chapter 4 Environmental Consequences*.

- **Reconfiguration of the Northeast Ridge.** Development under the 2007 VTM would include grading of 19.64 acres of undisturbed land for UII-NII; dedication of 20.36 acres of Conserved Habitat; construction, use, and maintenance of 71 single-family detached home lots; landscaping and maintenance of common areas; installation, operation, and maintenance of required public and association-owned infrastructure; and monitoring as required for these features.
- **Management and Monitoring of Conserved Habitat.** Provision of supplementary funding by Brookfield Northeast Ridge II LLC would enhance vegetation management and monitoring activities on Conserved Habitat. Improved management would emphasize control of thatch build-up and non-native species invasion for the benefit of the Species of Concern.

Source: Carlson, Barbee & Gibson, Inc.

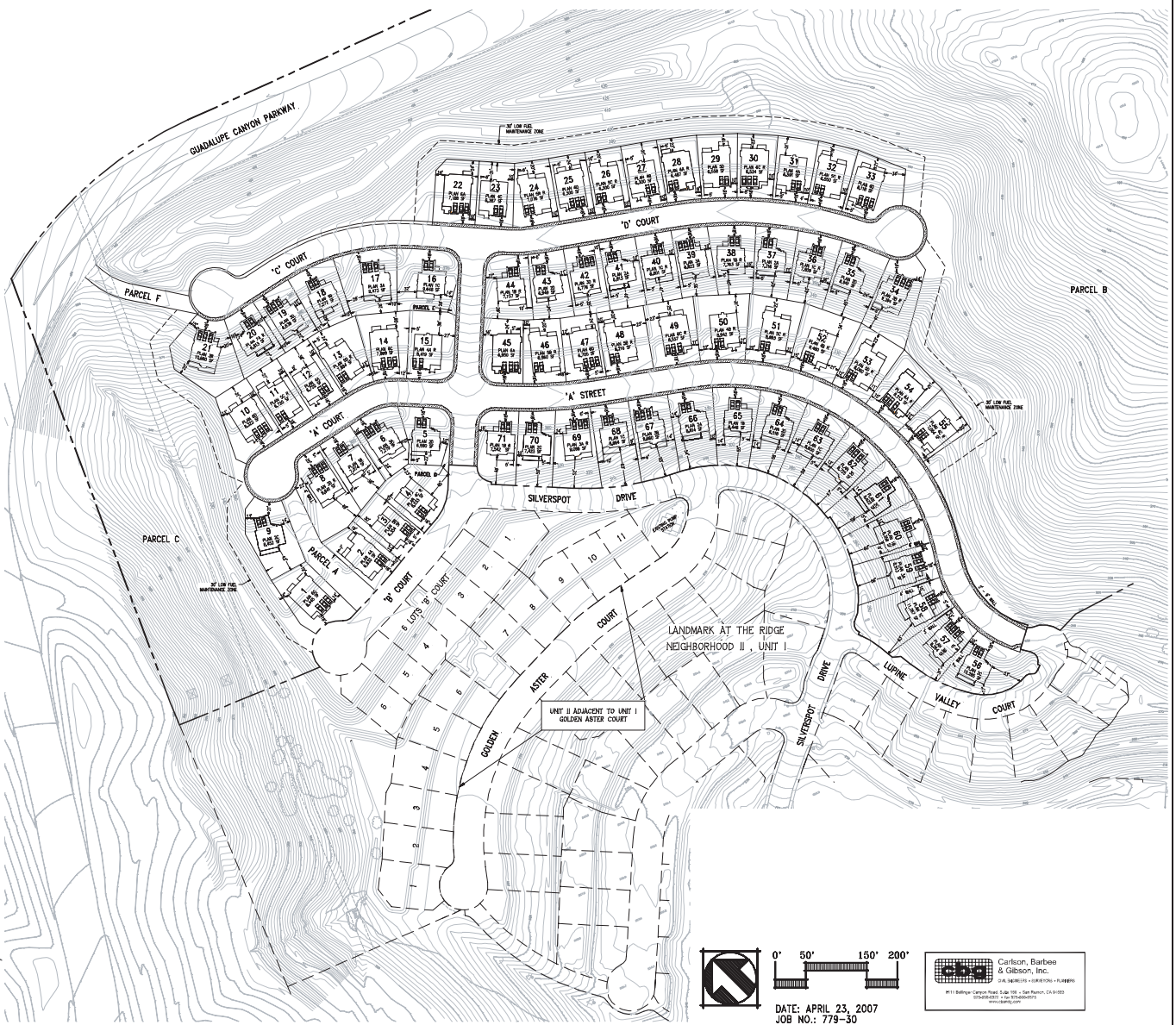


Figure 1-4
2007 Site Plan, Northeast Ridge

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The Biological Study and Analysis of Conserved Habitat for Amendments to the Habitat Conservation Plan for San Bruno Mountain and Incidental Take Permit PRT 2-9818 is included as Appendix A to this EA. The *2007 Habitat Management Plan* is included as Appendix B to this EA.

Callippe Silverspot Butterfly

The Proposed Action includes addition of the callippe silverspot to the ITP. The callippe silverspot butterfly was proposed for listing in 1991, a proposed rule was published in 1994, and a final rule listing the species as endangered was published on December 5, 1997.

The callippe silverspot's host plant is the native viola (also called Johnny jump-up) (*Viola pedunculata*). The callippe silverspot occurs in areas where the butterfly's larval host plant is located, where adult nectar plants are present, and on ridges and hilltops where courtship and mating take place. On San Bruno Mountain, there are two population centers of the callippe silverspot (the Southeast Ridge and Northeast Ridge), but adults regularly disperse between them. Some adult callippe silverspot also disperse from San Bruno Mountain to Sign Hill, and vice versa (USFWS 2006).

Bay Checkerspot Butterfly

The Proposed Action includes addition of the bay checkerspot to the ITP. The bay checkerspot butterfly was listed as a federal threatened species in 1987. A recovery plan for serpentine soil species was adopted in September 1998.

The bay checkerspot's host plants are the California plantain (*Plantago erecta*) and owl's clover (*Castilleja densiflora*). Approximately 748 acres of the Mountain are designated Critical Habitat for the bay checkerspot, situated mostly within San Bruno Mountain State and County Park. This unit is currently unoccupied by the bay checkerspot. The butterfly appears to have been extirpated from the Mountain, as no individuals have been observed since 1984. However, the USFWS has determined that since the unit has supported a population of the animal in the recent past, it is reasonable to expect that the species can be reestablished here (USFWS 2006).

Purpose of Proposed Action

The purpose of the Proposed Action is to:

- Respond to the Permittee's application for an amendment to the existing ITP for the callippe silverspot and bay checkerspot related to activities that have the potential to result in take, pursuant to the ESA section 10(a)(1)(B) and its implementing regulations and policies;
- Protect, conserve, and enhance the long-term survival of the Species of Concern, including the callippe silverspot and bay checkerspot, and their habitat for the continuing benefit of the people of the United States;
- Provide a means and take steps to conserve the ecosystems used by the Species of Concern, including the callippe silverspot and bay checkerspot; and
- Ensure compliance with the ESA and NEPA.

Under the Amendment, the Permittees will continue to implement the measures set forth in the HCP to minimize and mitigate the impacts of permitted activities on both listed and nonlisted species.

Need for Proposed Action

The Proposed Action is necessary because the callippe silverspot and bay checkerspot were listed after the issuance of the existing ITP and activities proposed by the Permittees could now result in take of these species. Issuance of an amendment to the existing ITP will allow the implementation of the amended HCP in compliance with the ESA.

1.4 Criteria for Issuance of Permit

The ESA was amended in 1982 to add a provision in Section 10 that allows for the incidental take of listed species by non-federal entities. Because the timing of the final execution of the 1983 HCP occurred during the period of time between the end of the public comment period on the draft regulations regarding the processing and issuance of Section 10(a)(1)(B) permits and the issuance of the final regulations, the amendments discussed in this document are being considered in accordance with the provisions of the 1983 HCP and its accompanying *Agreement with Respect to the San Bruno Mountain Habitat Conservation Plan* (Implementing Agreement). Pursuant to the Implementing Agreement, the Permittees are providing a biological study of the proposed amendments to the HCP. The changes proposed in the amendments are being considered following the amendment procedures outlined in the 1983 HCP, specifically the "Amendments for Exchange of Equivalent Conserved Habitat Prior to Grading" and "All Other Amendments" procedures in section V.F. of the HCP, and reiterated in section IX of the Implementing Agreement.

The USFWS, however, also intends to ensure that the substantive elements of Section 10[a][2][B] and implementing regulations (50 CFR 17.32[b][2][i]) are adequately addressed in its determination for issuance of the amended ITP. These criteria include the following findings.

- The take will be incidental to otherwise lawful activities.
- The applicant will minimize and mitigate the impacts of the take to the maximum extent practicable.
- The applicant will ensure adequate funding for the conservation plan and procedures to deal with unforeseen circumstances.
- The take will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.
- The measures required by the USFWS, if any, will be met.
- The USFWS has received any other assurances it requires that the HCP will be implemented.

Based on the above considerations, the USFWS may choose from the following:

1. Issue a permit amendment conditioned on implementation of the 1983 HCP as amended;
2. Issue a permit amendment conditioned on implementation of the 1983 HCP as amended, and as submitted together with other measures specified by the USFWS; or
3. Deny the permit amendment.

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Chapter 2

Description of Alternatives, Including the Proposed Action

As referenced in CEQ's NEPA regulations regarding the contents of an EA (40 CFR 1508.9(b)), NEPA Section 102[2][E] requires federal agencies to develop, study, and briefly describe alternatives to any proposed action with the potential to result in unresolved resource conflicts. This chapter describes the alternatives evaluated by USFWS, including the alternatives evaluated in detail in this EA (the Proposed Action, the 1989 Northeast Ridge Plan Alternative, and the No Action Alternative).

2.1 Alternatives Development Process

The Northeast Ridge has been a planned parcel since the HCP was completed in 1982. Figure 2-1 shows the location of the Northeast Ridge on the Mountain. The City of Brisbane approved a VTM in 1982 for development of 1,250 residential units within the Northeast Ridge. The City approved a revised VTM in 1989 that reduced the total number of dwelling units to 579, and the USFWS and the California Department of Fish & Game (DFG) approved an Equivalent Exchange Amendment for this revised design in 1990. Figure 2-2 shows the 1989 VTM.

Consistent with these approvals, portions of the Northeast Ridge were developed. The first development phase included 428 dwelling units and community facilities. Development of the first phase [Unit I-Neighborhood I (UI-NI), Neighborhood II (UI-NII), and Neighborhood III (UI-NIII)], which is substantially built and occupied, permanently disturbed 66.99 acres. In 2006 and 2007, the City of Brisbane and the USFWS agreed that Brookfield Northeast Ridge II LLC could proceed with development of 17 single-family residential units north of Unit I that had been disturbed by previous grading, roadway and infrastructure grading, and slope stabilization measures. The remaining 66.39 acres of Unit I were dedicated as Conserved Habitat. As approved under the 1989 VTM, the second phase would include development of two additional neighborhoods [Unit II-Neighborhood I (UII-NI) and Neighborhood II (UII-NII)] for a total of 168 dwelling units. UII-NI included 108 units and UII-NII included 60 units, for a total of 25.60 acres of permanently disturbed area. However, if Brookfield Northeast Ridge II LLC were to process an application to develop Unit II under the 1989 VTM, it would not include the 17 housing units

transferred to Unit I. The remaining 69.34 acres of Unit II were to be dedicated as Conserved Habitat.

Development of the remaining dwelling units requires an amendment to both the HCP and the existing ITP for take authorization for the callippe silverspot. The Northeast Ridge does not contain designated Critical Habitat for the bay checkerspot. The USFWS, the City of Brisbane, and Brookfield Northeast Ridge II LLC have been working together since 1997 (when the callippe silverspot was listed) to reconfigure the development plan to further avoid, minimize, and mitigate the potential impacts of the final phase of Northeast Ridge development. The revised 2007 VTM minimizes potential impacts to the callippe silverspot and its host plant, the native viola. The Proposed Action is the result of this collaboration.

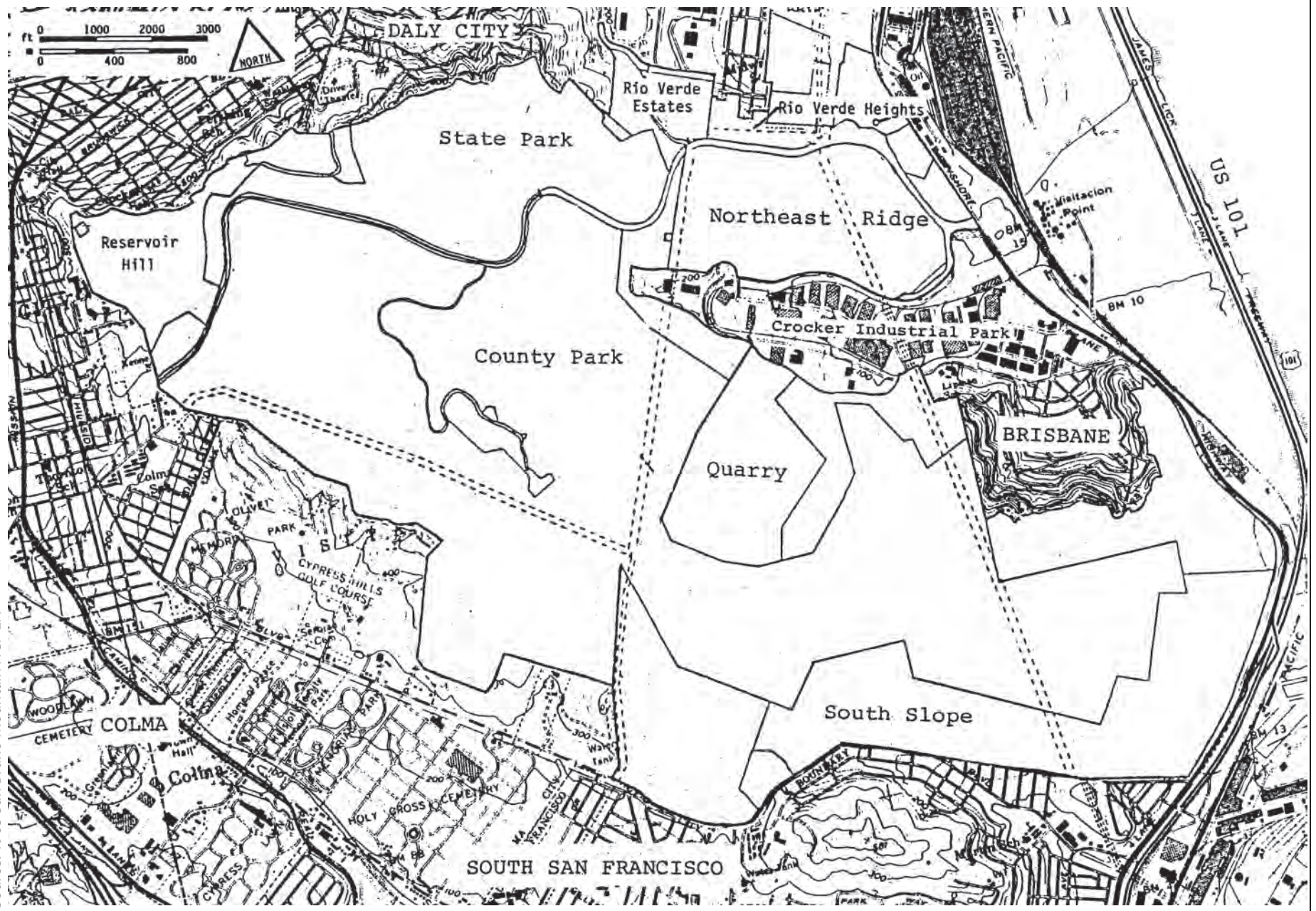
The alternatives under consideration in this EA include the following.

1. **Alternative 1—Proposed Action:** Issuance of an amendment to the existing ITP to add take coverage for the callippe silverspot and bay checkerspot butterflies for an HCP amendment which includes 1) reconfiguration of the Northeast Ridge development plan and Conserved Habitat per the 2007 VTM and 2) enhanced vegetation management and monitoring activities on Conserved Habitat due to supplementary funding.
2. **Alternative 2—1989 Northeast Ridge Plan:** Issuance of an amendment to the existing ITP to add take coverage for the callippe silverspot and bay checkerspot for the adopted HCP, which includes the 1989 VTM for Northeast Ridge and continuation of habitat management activities under the existing funding program. Vegetation management is presumed to occur in areas of butterfly habitat per authorization for take of the callippe and bay checkerspot.
- **Alternative 3—No Action:** No issuance of an amendment to the existing ITP to add take coverage for the callippe silverspot and bay checkerspot, and therefore rejection of the proposed reconfiguration of the Northeast Ridge and supplementary funding for vegetation management on the Mountain. Certain types of habitat management would continue to be prohibited in areas of butterfly habitat due to lack of take authorization.

2.2 Alternatives Analyzed in this EA

Alternative 1—Proposed Action

The Proposed Action consists of USFWS issuance of an amendment to an existing Section 10 ITP for activities covered by a proposed amendment to the San Bruno Mountain HCP. As described in *Chapter 1 Introduction*, the proposed HCP amendment would include a revised operating program for the Northeast Ridge; provision of supplementary funding; and a proposal for the addition of the callippe silverspot and bay checkerspot to the ITP.



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Source: Carlson, Barbee & Gibson, Inc

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The specific project or activities that trigger the need for issuance of an amendment to the existing ITP to add the callippe silverspot and bay checkerspot to the list of covered species are listed below. These activities may physically disturb, harm, or harass the endangered butterflies and are therefore analyzed in *Chapter 4 Environmental Consequences*.

- **Reconfiguration of the Northeast Ridge.** Development under the 2007 VTM would include grading of 19.64 acres of undisturbed land for UII-NII; dedication of 20.36 acres of Conserved Habitat; construction, use, and maintenance of 71 single-family detached home lots; landscaping and maintenance of common areas; installation, operation, and maintenance of required public and association-owned infrastructure; and monitoring as required for these features.
- **Management and Monitoring of Conserved Habitat.** Provision of supplementary funding by Brookfield Northeast Ridge II LLC would enhance vegetation management and monitoring activities on Conserved Habitat. Improved management would emphasize control of thatch build-up and non-native species invasion for the benefit of the Species of Concern.

Reconfiguration of the Northeast Ridge

Administrative Parcel 1-07 (the Northeast Ridge) covers 228 acres located in the northeast corner of San Bruno Mountain. It is bounded on the south by the Crocker Industrial Park, on the north and east by Guadalupe Canyon Parkway, and on the west by a PG&E transmission line (refer to Figure 2-1). It has a hilly terrain that supports four vegetation types: annual grassland, coastal scrub, riparian/wetland, and introduced exotics. Approximately 90% of the site is annual grassland. Existing land uses surrounding the Northeast Ridge include single-family neighborhoods across Guadalupe Canyon Parkway to the north; undeveloped open space to the east; multi-family residential development to the south; and the State and County Park to the west.

2007 Northeast Ridge VTM

The 2007 Northeast Ridge development has been substantially modified from the 1989/1990 approvals. The HCP amendment proposes to authorize the 2007 VTM, which would include 71 single-family homes in UII-NII. Under the 2007 VTM, the 228.3-acre parcel would contain 144.7 acres of Conserved Habitat for the Species of Concern and 83.7 acres of development. Table 2-1 provides an overview of the 2007 VTM acreages.

In 2006, the City of Brisbane and USFWS agreed that Brookfield Northeast Ridge II LLC could proceed with development of 11 single-family residential units on 5.67 acres north of Unit I that had been disturbed by the remedial grading required for the earlier phase of development. Because the area had been previously impacted and no longer contained potentially suitable habitat for the callippe silverspot or bay checkerspot, no take authorization was required, and

these homes and associated infrastructure are currently under construction. In 2007, the City and USFWS further determined that roadway construction, infrastructure installation, and slope stabilization measures needed for public health, safety and welfare reasons required grading of an additional 1.07 acre area north of Unit I (referred to as “infrastructure grading”). The City and USFWS agreed that 6 additional housing units could be constructed on this previously undisturbed area outside the HCP fence location at that time. The total 17 housing units considered ‘transferred’ to Unit I comprise a 6.74-acre area. This EA evaluates potential impacts to the callippe silverspot and its habitat on the 1.07 acre infrastructure grading site.

Table 2-1. 2007 VTM Area Summary

	Unit I (acres)	Unit II (acres)	Total (acres)
Conserved Habitat	66.39	78.27	144.66
Development Area	66.99	16.67	83.66
Total Acreage	133.38	94.94	228.32

Note: Unit I includes the 17 units under construction on the previously disturbed and infrastructure grading areas.

Figure 2-3 shows the 2007 VTM. Figure 2-4 provides a graphic comparison and Table 2-2 provides an acreage comparison of the two VTMs.

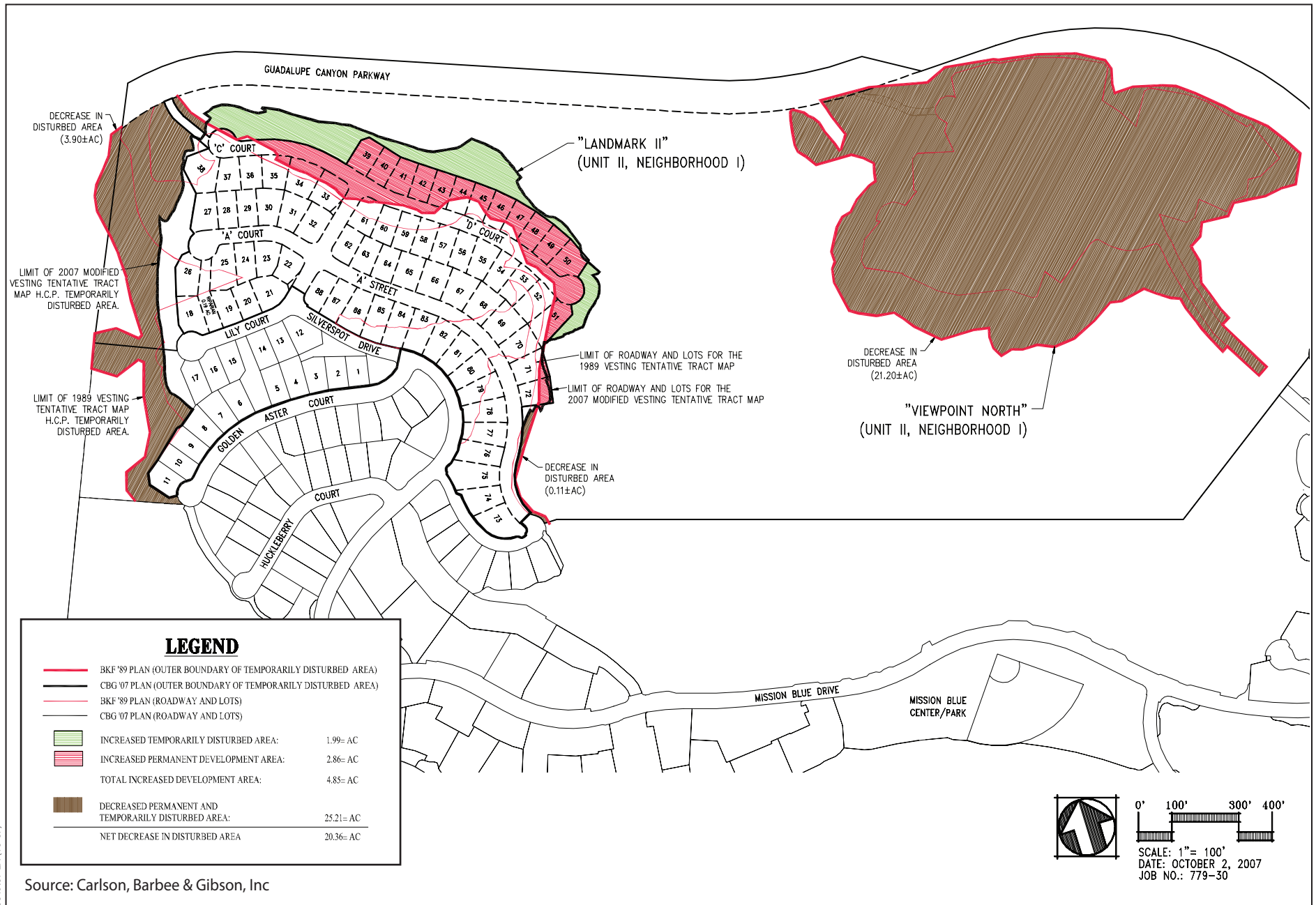
The 2007 VTM would permanently disturb 16.67 acres, with an additional 2.97 acres temporarily disturbed and subsequently revegetated. UII-NI would be left undeveloped and would be dedicated as Conserved Habitat. The USFWS, the City, and Brookfield Northeast Ridge II LLC conferred on a plan to redesign UII-NII to avoid high quality callippe silverspot habitat along the western boundary and to transfer 28 units from UII-NI to UII-NII. After completion of construction, UII-NII would include 71 single-family homes. As a result, UII-NII would increase in size by 4.97 acres, but the additional impacts would occur in a eucalyptus (*Eucalyptus globulus*) grove and areas previously designated for temporary disturbance and restoration. The 2007 VTM would result in a net increase of 8.93 acres of Conserved Habitat over the 1989 VTM. Brookfield Northeast Ridge II LLC also proposes to provide supplemental funding for the HCP, as described below.



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Source: Carlson, Barbee & Gibson, Inc.

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Table 2-2. Comparison of Total Land Conversion in 1989 and 2007 Northeast Ridge VTMs, Unit II

Disturbance Area	1989 VTM (acres)			2007 VTM (acres)			Difference (1989 to 2007)
	UII-NI	UII-NII	Total	UII-NI	UII-NII	Total	Total
Permanent	13.90	11.70	25.60	0.00	16.67	16.67	-8.93
Temporary/ Restored	7.30	7.10	14.40	0.00	2.97	2.97	-11.43
Total	21.20	18.80	40.00	0.00	19.64	19.64	-20.36

Note: Acreage does not include the areas in Unit I disturbed by the 2007 infrastructure grading.

The 2007 VTM covers the final phase of development of Administrative Parcel 1-07-02, including the following activities.

- Grading of 19.64 acres of undisturbed area for UII-NII, including 16.67 acres that would be permanently disturbed and 2.97 acres that would be disturbed temporarily and then revegetated pursuant to HCP criteria.
- Dedication of 78.27 acres of Conserved Habitat, including the 2.97 acres that would be disturbed temporarily and then restored.
- Construction, use, and maintenance of 71 single-family detached home lots.
- Landscaping and maintenance of common areas, including revegetation and management of temporarily disturbed areas and installation and maintenance of fuel management zones.
- Installation, operation, and maintenance of required public or association-owned infrastructure, sidewalks, community fencing or walls, streetlights, traffic signs and signals, drainage facilities (including concrete v-ditches), and utilities (including, but not limited to, water, sewer, electricity, gas, telephone, and cable).
- Construction and use of the public emergency vehicle access (EVA).
- Removal of portions of the existing eucalyptus grove (6.82 acres).
- Monitoring required for the installation, construction, or operation of any of the features described above.

The fuel modification zone, which would be owned and maintained by the HCP Operator, would be vegetated, to the extent practicable, with native plants that do not present an invasive threat to the adjacent grasslands within the future Conserved Habitat. Portions (approximately 0.41 acres) of the fuel modification zone extend into otherwise undisturbed areas. The Northeast Ridge homeowners associations may conduct additional maintenance of the fuel modification zone through removal of wooded material within 30 feet of adjacent lots. Concrete V-ditches would be installed on the graded slopes within the fuel modification zone to convey stormwater runoff. These facilities would also be maintained by the Plan Operator, but are not expected to require frequent maintenance. The

Northeast Ridge homeowner's association would fund the required maintenance, per an agreement with the City.

The primary access to UII-NII would be from the south via existing streets in the adjacent UI-NII. The EVA, approximately 20 feet wide and 180 feet long, would connect the northern corner of the community ("C" Court) to Guadalupe Canyon Parkway. Access to this EVA, which would be concrete, would be limited by locked gates to emergency vehicles only.

Portions of the perimeter of UII-NII may have a 4-foot catchment wall where lots and roadways are adjacent to the HCP open space. These areas may include a portion of "C" Court in the northern tip of the development and the easterly edge of "A" Street in the southern end of the development. The final design of the catchment walls are subject to the City Engineer's approval of the grading and improvement plans, at the time of or just prior to final map approvals.

The Northeast Ridge currently contains a 7.85-acre eucalyptus grove. Existing approvals related to the 1989 VTM require removal and thinning of these trees, which has been delayed due to the listing of the callippe silverspot. Construction of the proposed 2007 VTM would permanently remove 6.82 acres of eucalyptus trees; 1.02 acres would remain in Conserved Habitat and be thinned (minimum of 45-feet between trees) by Brookfield Northeast Ridge II LLC. This is an increase of 2.1 acres of tree removal as compared to the 1989 VTM (from 4.7 acres under the 1989 VTM to 6.8 acres under the 2007 VTM).

Conserved Habitat

Reductions in the size of the Northeast Ridge development area increase the size of the Conserved Habitat. Under the 2007 VTM, the 228.3-acre parcel would contain 144.7 acres of Conserved Habitat for the Species of Concern. The Conserved Habitat area contains a diversity of habitat types (including prominent hilltops, various slope orientations, etc.), is contiguous with other Conserved Habitat areas off-site, and contains corridors between larger Conserved Habitat areas on-site.

Under the 2007 VTM, approximately 78.27 acres in Unit II would be granted to the Plan Operator as Conserved Habitat. The 2007 VTM would increase undisturbed Conserved Habitat by 20.36 acres and would result in a net increase in Conserved Habitat by 8.93 acres, namely because UII-NI would not be constructed. Table 2-3 provides a comparison of Conserved Habitat acreages in Unit II.

Table 2-3. Comparison of Conserved Habitat in 1989 and 2007 Northeast Ridge VTMs, Unit II

	1989 VTM (acres)	2007 VTM (acres)	Difference (2007 to 1989)
Conserved Habitat	69.34	78.27	8.93
<i>Undisturbed</i>	54.94	75.30	20.36
<i>Temporarily Disturbed/ Restored</i>	14.40	2.97	-11.43
Development Area	25.60	16.67	-8.93
Total	94.94	94.94	0.00

Note: Acreage does not include the areas in Unit I disturbed by the 2007 infrastructure grading.

The 2007 VTM would allow disturbances to 19.64 acres in UII-NII, and avoids development impacts in UII-NI entirely. The proposed reconfiguration avoids 21.20 acres of high quality callippe silverspot habitat within UII-NI. The proposed development area in the 2007 VTM is within areas of lower value habitat pursuant to the judgment of the USFWS. Additionally, the extent of impacts in UII-NII would be minimized by the use of catchment walls, which limit the grading required to stabilize slopes. The increased development acreage in UII-NII would occur in the eucalyptus grove and areas previously proposed as revegetated areas. The 7.85-acre eucalyptus grove currently acts as a barrier to butterfly movement, and its removal would be beneficial to the species. However, the benefits of tree removal may be offset by construction of the housing development itself acting as a barrier to movement and increasing human activity directly adjacent to butterfly habitat (see Section 4.3 in *Chapter 4 Environmental Consequences*).

Permanent development footprint impacts are reduced from 25.60 acres under the 1989 VTM to 16.67 acres in the 2007 VTM. Temporary impacts are similarly reduced from 14.40 acres to 2.97 acres. Reductions in the amount of temporarily disturbed land results in protection of butterfly habitat, particularly given the difficulty in artificially propagating viola. A total of 20.36 acres of additional Conserved Habitat would be dedicated under the proposed reconfiguration.

Proposed Mitigation

Development of 2007 VTM would be conducted with the avoidance, minimization, and mitigation measures required in the HCP. Additional measures will also be undertaken:

- The existing HCP (1982, as amended) requires an annual charge of \$20 per dwelling unit (\$88.56 in 2007 dollars). Pursuant to recent subdivision improvement agreements with the City of Brisbane, the 71 housing units in the 2007 VTM and the 17 units under construction in Unit I would pay an annual assessment of \$800.00 in 2005 dollars (\$850 in 2007 dollars). This proposed annual assessment (\$74,800 in 2007 dollars) represents a

substantial increase to the amount currently required under the HCP. The amount of the dwelling unit charge would be adjusted annually in accordance with increases in the preceding calendar year's Consumer Price Index for Urban Wage Earners and Clerical Workers within the San Francisco-Oakland-San Jose area, as reported by the U.S. Department of Labor's Bureau of Labor Statistics. All funds collected would become part of the HCP's Trust Fund used by the Plan Operator for vegetation management activities. Contribution to the Trust Fund is required by the HCP for all development within the HCP boundary.

- Brookfield Northeast Ridge II LLC would fund a \$4 million HCP Endowment to be managed by the Trustees for the ongoing habitat management and monitoring activities of the HCP. The new Endowment is being established pursuant to a negotiated agreement between the City of Brisbane and Brookfield Northeast Ridge II LLC. The Endowment would be funded incrementally upon the granting of final map approval for the lots in UII-NII. Funding of the Endowment was divided over 88 dwelling units, including the 71 housing units in the 2007 VTM and the 17 units under construction in Unit I. It is expected that this Endowment would generate over \$200,000 per year in interest, available to the Trustees for the management and monitoring of the Conserved Habitat. The management would be done in accordance with the HMP, as described in Section II.B.
- The remainder of the Northeast Ridge, which includes undisturbed open space areas and the areas temporarily disturbed but restored/revegetated, would be dedicated as Conserved Habitat. Brookfield Northeast Ridge II LLC would fund the management of the restored areas for a period that extends 5 years after the completion of grading and revegetation in these areas. All undisturbed areas would be dedicated to and maintained by the HCP Operator.
- Brookfield Northeast Ridge II LLC would remove a portion of the on-site eucalyptus grove, which acts as a barrier to movement of the mission blue and callippe silverspot butterflies. Approximately 6.82 acres of the eucalyptus grove would be removed at the time of housing construction for UII-NII or a timeframe mutually agreeable to the City and the developer.

The existing HCP currently provides a funding mechanism used to address the highest priority threats to endangered butterfly habitat. The 2007 Habitat Management Plan proposes use of additional methods (i.e., grazing, burning, and mowing) on a more comprehensive scale in order to change the conditions that favor invasive species and brush on the Mountain. Utilizing these additional tools on a broad scale, while continuing existing vegetation management programs, would require substantial additional funding (TRA 2007).

TRA (2007) reports that management and monitoring of Priority 1, 2, and 3 areas within the San Bruno Mountain HCP area to maintain existing grasslands and reclaim former grassland areas that have been lost to coastal scrub succession would require a significant increase in funding. Without the supplemental funding, only the Priority 1 areas containing core habitat for the callippe silverspot and mission blue would be managed. The existing Trust Fund and new

Endowment would be used by the Plan Operator for expanded vegetation management and monitoring activities on all Priority 1, 2, and 3 areas.

Management and Monitoring of Conserved Habitat

There are currently approximately 2,750 acres of Conserved Habitat (parks and dedicated lands) on San Bruno Mountain. Much of these lands provide habitat for the Mountain's listed butterflies, as well as the other rare and endangered species that inhabit it. Habitat management activities are authorized under the HCP, and since the 1990s, habitat maintenance has been guided by management plans, which had been updated every five years. The addition of the callippe silverspot and bay checkerspot to the ITP would authorize the potential take of both during on-going vegetation management and monitoring of the Conserved Habitat, and the potential take of callippe silverspot during vegetation management, replanting, and restoration following the final phase of the Northeast Ridge development (described above). Take of the callippe silverspot and bay checkerspot and their habitat would be authorized for habitat management activities that occur under the 2007 Habitat Management Plan (HMP) and future iterations. The 2007 HMP is included as Appendix B to this EA.

The 2007 HMP focuses on continuing the current habitat management methods that have proven to be successful, and utilizing additional methods to reverse the conditions that favor invasive species and brush on the Mountain. It defines Priority 1-3 areas for habitat management in order to focus protection and restoration efforts: Priority 1 includes all grassland areas including all habitat for the four listed butterflies; Priority 2 includes all other native plant communities; and Priority 3 includes dense invasive species infestations. The 2007 HMP implements a Stewardship Grazing Program, including application and testing of grazing projects. It also expands monitoring to provide relative population and distribution data for the callippe silverspot, mission blue, and San Bruno elfin butterflies. Habitat management would be conducted in all management units every year, with a focus on fulfilling the goals and objectives of the HCP. The work program would be determined on an annual basis through the collaboration between the Plan Operator, County of San Mateo, and the San Bruno Mountain Technical Advisory Committee, with guidance from the USFWS.

Vegetation Management

The following is a list of the vegetation management techniques listed in the 2007 HMP and a description of how each is used on the Mountain.

Hand Work

Hand removal of invasive plants is an effective method for eliminating clusters of invasive plants, especially seedlings and plants whose root structure is not prohibitively deep or large. Hand removal involves identifying the target species and then sending crews out to either pull plants out of the ground, use a weed wrench to remove bigger plants, or cut down plants with an ax maddox or chain saw. The plants removed are piled up and either manually removed, burned, or

allowed to decompose over time. Hand removal of weeds has the benefit of selectively removing weed biomass from sensitive areas.

For the purposes of this EA, flaming is also considered hand work. Flaming involves using a gas torch to pass intense heat over the leafy parts of a plant. The heat causes the plant cell walls to burst, killing the plant. Flaming can be used on young, emerging weeds without affecting established, desirable plants and it leaves no residue. Flaming is not effective on weeds with underground reserves. Flaming may be effective on invasive species such as French Broom, and would only be used during the wet season, during appropriate conditions.

Herbicide Application

Herbicide control is typically used on mature, dense stands of invasives that are more cost effective to spray than remove by hand. Most invasive pest plant infestations treated with herbicide are treated 2-3 times per year by foliar spraying. The initial treatment typically has a 95% kill rate followed up with routine maintenance every six to twelve months for up to three years until the infestation is killed. Ongoing maintenance and monitoring is required after three years.

Herbicide application is conducted on the Mountain because it can be conducted faster than hand work and is more cost effective. Herbicide application over successive years, however, can create a dense layer of thatch, and this additional biomass on the soil tends to favor colonization by nonnative annual grasses, herbaceous weeds, and coastal scrub succession.

Livestock Grazing

Grazing is the utilization of grassland (forage) by domestic livestock such as cattle, sheep, goats, or horses. Where appropriate, re-introduction of grazing can be an effective means of maintaining the grassland habitat by reducing brush and tall annual grasses which out-compete native grassland plants, including the butterfly host plants.

Grazing has yet to be used on a large scale on San Bruno Mountain for habitat enhancement purposes. Depending upon a variety of factors, grazing can have a positive (encourage more natives) or negative (stimulate more invasives and erosion) impact upon a landscape. The number of animals, type of animals, duration and frequency of grazing events, and vegetation type are all variables that will influence the results of grazing. Grazing will effect soil compaction, soil nutrients, light, and both native and nonnative vegetation. Livestock type may be the most critical factor to consider due to the variation in diet preferences for different species. While it is possible that a significant improvement in the landscape from grazing may occur immediately, it typically takes at least a 2-4 years to obtain significant results. Over time, a consistent practice of grazing in the early spring can result in reduction of weedy annuals and perpetuation of native grasslands and native annual wildflowers. Grazing can also be an effective tool for managing fire buffers.

Prescribed Burning

Prescribed burning is defined as fire applied in a knowledgeable manner to fuels on a specific land area to accomplish predetermined, well-defined management objectives. The introduction of a burning program similar to what occurred historically on San Bruno Mountain could be instrumental in achieving long-term sustainability of the grasslands and butterfly habitat on the Mountain. However, because San Bruno Mountain is an open space area that is surrounded by dense urban and suburban development, the ability to allow wildfires to burn or to implement prescribed burning on a regular basis (if even at all), is not a reliable option for habitat managers.

Given the constraints, micro-burns (burns on the order of a few hundred square meters or less, and contained in fire-proof fencing) might prove useful and feasible. These small burns can aid in combating localized weed or scrub infestations or thatch build-up and may be more easily permitted. To be an effective tool for the maintenance of grasslands, micro-burns would need to be conducted in the summer or fall to meet grassland maintenance goals.

If prescribed or micro-burning is employed for managing vegetation, it would occur under the direction of the California Department of Forestry and Fire Protection (CDFFP), and implementation would require the assistance of CDFFP, the County of San Mateo, the Bay Area Air Quality Management District (BAAQMD), and local fire departments. Any burning conducted will be consistent with The San Bruno Mountain Community Wildfire Protection & Fire Use Plan (CDF and TRA 2005).

Pile Burning

Pile or slash burning is an integral part of the management program. This technique is important for reducing the accumulation of brush (wildfire fuels), and for decreasing native scrub and invasive species coverage. Pile burning can be conducted safely during the winter months when the surrounding vegetation is wet and fuel moisture levels are high, and the risk of fire escape is negligible. Combined with mowing and/or grazing, it is an excellent technique for opening up areas for conversion to grassland and for preparing areas for replanting. Post disturbance follow-up weed control is critically important to control the flush of weeds that may occur in areas following clearing and pile burning activities.

Mowing

Mowing has shown to be an effective tool and is used frequently as part of the current ongoing grassland management of the Mountain. Mowing can be used to depress woody and weedy invasive species in the same manner as grazing and burning. Mowing has been found to be effective at reducing annual grasses and providing a competitive advantage to native species, including the host plants for the mission blue butterfly. It is especially useful within highly sensitive areas, to avoid impacting rare species. It cannot be effectively implemented on a large scale to address annual invasive species, however, due to steep slopes on much of the Mountain. Mowing needs to be conducted repeatedly, 2-4 times per year, and prior to invasive species seed set. Mowing can be done with a tractor mower for large areas, or with a weed-eater for small areas.

Mechanical Clearing

Clearing of unwanted brush and trees, such as broom, gorse, coyote brush, Monterey pine and eucalyptus may be accomplished by a variety of means. Private contractors, the California Conservation Corps, County Fire Safe crews, and CDF prison crews have been used for brush clearing projects on the Mountain. Mechanical methods for brush and tree removal may also successfully meet management goals, but generally at a higher cost. A Brontosaurus (a large cutting head mounted on a tracked caterpillar) can effectively remove brush where hand removal or grazing is not feasible. The Brontosaurus removes and chips brush and small trees in a single operation.

Replanting/Restoration

Restoration activities on the Mountain may include re-seeding, Mycorrhizal inoculation, nutrient fixation, and replanting. In areas that have long been dominated by invasives, the density of the native seed in the soil may be markedly diminished. Re-seeding with locally grown, native seed can be used in specific areas that have had invasive species control work, a high erosion potential and/or are located within habitat restoration islands. Mycorrhizal inoculation may include reintroduction of fungi, which grow into the root tip cells of the plants and form a symbiotic relationship with them, to coastal sage scrub restoration sites. Nutrient fixation can be done through the addition of recalcitrant mulch, such as bark or wood chips, to the soil. Replanting has been used with success on San Bruno Mountain when areas have been properly selected and when thorough follow up work has been done to protect plantings. Smaller habitat islands, approximately 1 acre or less, are managed more easily and can provide habitat for the endangered species once plants are established and maintained for a few years (San Bruno Mountain Annual Reports 2002–2006 [TRA 1997]). Successful habitat islands have been created within the conserved areas, as well as on development slopes.

Monitoring

The HCP requires monitoring to ensure compliance with the terms of the HCP and to evaluate effectiveness of ongoing conservation efforts. The HMP's monitoring program is intended to implement the monitoring requirements of the HCP based on contemporary scientific practices. Undertaken by the Plan Operator, monitoring includes recording regular observations of biological processes and conservation activities on the Mountain. The purpose of monitoring is to assure that the Plan conditions are being met in practice, and to keep an ongoing record of the progress of Plan implementation. This allows the Plan Operator to conduct periodic re-evaluation of the vegetation management activities underway and modify them as appropriate. The degree of monitoring corresponds to the intensity of construction and/or management techniques underway, and would be structured to provide sufficient information for ongoing review. Monitoring of initial experimentation would be more intensive than monitoring done after techniques are established.

Endangered Butterfly Monitoring

Endangered butterfly monitoring conducted over the 25-year span of the San Bruno Mountain HCP has focused on assessing the distribution and/or relative abundance of the federally endangered callippe silverspot, mission blue, and San Bruno elfin butterflies on the Mountain. All three butterflies have low growing host plants that can easily be overgrown by weeds and/or coastal scrub vegetation, and all three species overlap in their distribution on the Mountain. Two monitoring systems have been used to monitor the endangered species on the Mountain: set transects and wandering transects. The 2007 HMP directs continuation of the current set transect monitoring system, with minor modifications made to the mission blue transects.

Rare Plant Surveys

Rare plant distribution data has been collected in GIS format within the last 5 years for all listed plant species. This includes the manzanita colonies (all species), Diablo rock rose (*Helianthella castanea*), San Francisco lessingia (*Lessingia germanorum*), San Francisco spineflower (*Chorizanthe cuspidata* var. *cuspidata*), San Francisco campion (*Silene verecunda* ssp. *verecunda*), and dune tansy (*Tanacetum camphoratum*). The 2007 HMP directs GPS mapping of all the special status rare plant species on a cycle of once every two years on the Mountain to track changes in distribution and monitor health of these colonies.

Monitoring of Additional Species

Monitoring for additional species (i.e., bumblebees and ants) may be conducted and academic research on the Mountain is encouraged to provide this additional information. HCP monitoring funds are focused on the endangered species and their habitats, as required under the HCP permit. While monitoring is focused on the butterflies of concern and rare plants, study and management of the Mountain's overall ecosystem will benefit the listed species.

Vegetation Management Effectiveness Monitoring

Vegetation management effectiveness monitoring is vital to recognizing changes to the ecosystem and to gauge the results of habitat management work. Effectiveness monitoring over the 25-year span of the HCP has been focused on tracking invasive species distribution and coastal scrub succession. Vegetation monitoring has been done using primarily two methods: daily tracking of work conducted and overall distribution of vegetation types and invasive species. To track large scale changes in vegetation, the 2007 HMP directs mapping using aerial ortho-photo interpretation and field checking, and that the Mountain be remapped using this technique every 5 years. For finer scale monitoring, fixed transects and quadrats will be used.

Alternative 2—1989 Northeast Ridge Plan

As described above, the City approved a 1989 VTM that provided for 579 residential units, and the USFWS and DFG approved an Equivalent Exchange Amendment for this revised design in 1990 (refer to Figure 2-2). Under the 1989 VTM, the 228.3-acre parcel would contain 135.7 acres of Conserved Habitat for

the Species of Concern and 92.59 acres of development. Table 2-4 provides an overview of the 1989 VTM acreages.

Table 2-4. 1989 VTM Area Summary

	Unit I (acres)	Unit II (acres)	Total (acres)
Conserved Habitat	66.39	69.34	135.73
Development Area	66.99	25.60	92.59
Total Acreage	133.38	94.94	228.32

Note: Unit I includes the 17 units under construction on the previously disturbed and infrastructure grading areas.

If the USFWS amended the ITP to add callippe silverspot take authorization for the existing HCP, the construction of an additional residential neighborhood under the 1989 VTM would result in greater take of callippe silverspot habitat than the reconfigured 2007 VTM proposed in Alternative 1. The 1989 VTM includes disturbance of 18.8 acres for UII-NI and 21.2 acres for UII-NII (refer to Table 2-1). The 1989 VTM would permanently disturb 25.60 acres, with an additional 14.40 acres of revegetated land, for a total of disturbance of 40.00 acres. It would also remove 29.31 acres of grassland habitat as opposed to 12.01 acres under the 2007 VTM. UII-NI is considered a favored hilltop for the butterfly.

Under the 1989 VTM, a total of 151 new dwelling units would be constructed in two neighborhoods in Unit II (not including the 17 units transferred to Unit I in 2006/2007). The 1989 VTM would have resulted in 80 more housing units than the reduced 2007 VTM, which proposes 71 units in Unit II. These units would be assessed the annual dwelling unit charge authorized under the existing HCP and no additional endowment would be established. The existing HCP (1982, as amended) requires an annual charge of \$20 per dwelling unit (\$88.56 in 2007 dollars) for management and maintenance of Conserved Habitat. At \$88.56 per dwelling unit, the 151 housing units would generate a total of \$13,372.56 per year (in 2007 dollars) in assessments for implementing conservation activities on the Mountain. This is significantly lower than the annual assessment (\$74,800 in 2007 dollars) proposed under the 2007 VTM and associated subdivision agreements for the 88 housing units proposed and under construction.

With the limited funding generated under the 1989 VTM, however, the current habitat management and monitoring programs would be presumed to continue. The 2007 HMP reports that approximately 5.3 acres of grassland are converting to coastal scrub per year, and it is anticipated that this process will continue unless the management program is modified. Management limitations could result in the continued gradual loss of grassland habitat and potential decreases in butterfly distribution. The existing level of funding only allows the highest quality habitat to be maintained and allows encroachment of invasive weeds and native brush into the annual grassland. However, unlike the No Action alternative, management activities could be carried out within all Conserved

Habitat areas as this alternative would authorize take of the callippe silverspot and bay checkerspot butterflies. Although limited in scale due to funding limitations, this would allow for grazing, mowing, handwork, and use of herbicides in grassland that supports viola.

Alternative 3—No Action

Under the No Action alternative, the existing configuration of developed area and Conserved Habitat described and depicted in the existing HCP (1982, as amended) would remain in effect. This is the approved 1989 VTM (refer to Figure 2-2). However, since there is a prohibition against the take of the callippe silverspot on the Mountain without an ITP, development that results in take could not legally occur in any areas of the Northeast Ridge that support the callippe silverspot (or its host plant). As a result of minimum City standards (for street widths and lengths, street grades, looped water systems, lot widths and depths, driveway and garage depths, and emergency vehicle access), it is anticipated that most, if not all, development in the designated development areas has the potential to result in take of the callippe silverspot. Therefore, under this alternative, Brookfield Northeast Ridge II LLC would not likely build any additional homes within the 1990 authorized development areas. The development of even a portion of the 1989 VTM would likely be difficult and not cost effective.

The No Action alternative would result in little or no new residential construction on the Northeast Ridge at this time. Because access to the Northeast Ridge parcel would be limited to the landowner, the Plan Operator would not conduct habitat management activities for the listed butterflies on the Northeast Ridge. The No Action alternative would also result in no additional endowment funding and no expanded annual budget for vegetation management and monitoring on Conserved Habitat. The annual dwelling unit charge would be limited to \$20 per dwelling unit (\$88.56 in 2007 dollars), as required by the existing HCP. With no additional funding, continuation of the current management program would result in the continued gradual loss of grassland habitat and likely eventual decreases in butterfly distribution. The existing level of funding only allows the highest value habitat to be maintained and allows encroachment of invasive weeds and native brush into the grassland. Additionally, under the No Action alternative, management activities carried out within the Conserved Habitat would be restricted to areas that do not support viola so that they do not result in take of the callippe silverspot or its habitat. This would eliminate grazing, mowing, and burning, and use of herbicides in grassland that supports viola. The inability of the Plan Operator to conduct vegetation management activities within the grassland would lead to the build up of micro weeds and thatch, as well as brush invasion.

The No Action Alternative would limit development on the Northeast Ridge at this time. However, the landowner may pursue a revised development plan, submittal of a revised HCP amendment and ITP application, and/or legal means to uphold existing development rights.

2.3 Alternatives Eliminated from Further Consideration

The USFWS considered several alternatives that were not carried forward for analysis in this EA. Reasons for eliminating alternatives from further consideration included the following.

- The alternative would not adequately meet project objectives.
- The alternative site was found not to be feasible for project construction.
- The alternative was assessed as likely to result in unacceptable adverse environmental and/or economic effects.

Alternative Development Site

Construction of the proposed development project at an alternative location was considered; however, this alternative was rejected as a feasible alternative because it does not meet the purpose and need for the Proposed Action. The 1983 HCP allowed for development of the Northeast Ridge and ongoing habitat management and monitoring on the Mountain. Construction on an alternative development site would conflict with the HCP and the landowner's development rights.

Substantially Reduced Development

Construction of a development alternative that was reduced beyond that in Alternative 1 was considered; however, this alternative was rejected because it does not meet the purpose and need for the Proposed Action. The 1983 HCP allowed for development of the Northeast Ridge and limiting development approvals would conflict with the HCP and the landowner's development rights. Additionally, this alternative did not include the additional endowment funding to be made available for ongoing management and monitoring. This would directly conflict with the identified need for enhanced habitat management for the listed butterflies.